NLP to extract skills from text.

The assignment is to build a system that makes it possible for students and lecturers of
Fontys to easily get information or explanations about the desired topic.

This can be done by
automatically searching for Fontys students or lecturers who possess the knowledge and
skills about the desired topic.

The next step is to make it possible for students and/or lecturers to find a location of the other students and/or lecturers in order to ask study-related questions.

Created by: Marit
Created on: October 19, 2021 10:18 AM
Changed on: October 19, 2021 12:00 PM

Technology Impact Cycle Tool

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Impact on society
What impact is expected from your technology?

What is exactly the problem? Is it really a problem? Are you sure?
The problem is that students do not know where to reach out to get help on a study-related question.

Are you sure that this technology is solving the RIGHT problem?
Yes.

How is this technology going to solve the problem?
By using NLP we can find out which expertise students and lecturers have so they can be found by fellow students and lecturers who are in need of help.

What negative effects do you expect from this technology?
- The system can be stigmatizing
- Lack of privacy e.g.: You cannot hide the truth about your expertise, you are pressured to help people
- You can be interrupted/ disturbed while working on your own assignments

In what way is this technology contributing to a world you want to live in?
It has a negative impact, because privacy is being systematically invaded.
It can also have a positive impact, because people will be able to get good help faster.

Now that you have thought hard about the impact of this technology on society (by filling out the questions above), what improvements would you like to make to the technology? List them below.
The ability to use the program without the tracking of location.
The ability to choose/ filter which projects you want the system to process.
The ability to use it for a very large and diverse target audience.

Hateful and criminal actors

What can bad actors do with your technology?

This category is not applicable for this technology.

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Privacy

Are you considering the privacy & personal data of the users of your technology?

Does the technology register personal data? If yes, what personal data?

Yes: names, student numbers, photo's, projects, assignments, name of school, e-mail, phone number, adress, feedback of lecturers and fellow students

Do you think the technology invades the privacy of the stakeholders? If yes, in what way?

Yes, personal data is being used.

Is the technology is compliant with prevailing privacy and data protection law? Can you indicate why?

Yes, if consent is given.

Does the technology mitigate privacy and data protection risks/ concerns (privacy by design)? Please indicate how.

No, it does not activele mitigate.

In which way can you imagine a future impact of the collection of personal data?

We can imagine a future where the collected data can be misused by employers during the application process.

Now that you have thought hard about privacy and data protection, what improvements would you like to make? List them below.

We would like to secure the data of people more and give them more insights in what data is being used in what way. Also, data should not be able to be misused.

Human values

How does the technology affect your human values?

This category is not applicable for this technology.

Stakeholders

Have you considered all stakeholders?

This category is not applicable for this technology.

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Data

Is data in your technology properly used?

Are you familiar with the fundamental shortcomings and pitfalls of data and do you take this sufficiently into account in the technology?

It is almost impossible to have data shortcomings, because every person hands at least one project in during their school career.

How does the technology organize continuous improvement when it comes to the use of data?

The technology is self-learning (it is a form of AI), so it will constantly improve. The technology can also decrease in efficiency, because of the stigmatization.

How will the technology keep the insights that it identifies with data sustainable over time?

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In what way do you consider the fact that data is collected from the users?

There is no financial profit, since Fontys is a founding.

Now that you have thought hard about the impact of data on this technology, what improvements would you like to make? List them below.

We would like to add the possibility to filter your own data.

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Inclusivity

Is your technology fair for everyone?

Will everyone have access to the technology?
Yes.

Does this technology have a built-in bias?
No.

Does this technology make automatic decisions and how do you account for them?
This technology makes decision that we have told the technology to make, so nothing will happen automatic.

Is everyone benefitting from the technology or only a a small group? Do you see this as a problem? Why/why not?
The group of people who would like to use the tool, will be able to participate. This is not a problem, since it is a decision without any consequences.

Does the team that creates the technology represent the diversity of our society?
Yes.

Now that you have thought hard about the inclusivity of the technology, what improvements would you like to make? List them below.
Have a more diverse group of developers.

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Transparency
Are you transparent about how your technology works?

Is it explained to the users/stakeholders how the technology works and how the business model works?
No.

If the technology makes an (algorithmic) decision, is it explained to the users/stakeholders how the decision was reached?
No.

Is it possible to file a complaint or ask questions/get answers about this technology?
Possibly in the future.

Is the technology (company) clear about possible negative consequences or shortcomings of the technology?
Yes.

Now that you have thought hard about the transparency of this technology, what improvements would you like to make? List them below.
We would like to add a box in the tool where you can file a complaint.

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Sustainability

Is your technology environmentally sustainable?

This category is not applicable for this technology.

Technology Impact Cycle Tool

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Future
Did you consider future impact?

What could possibly happen with this technology in the future?
The technology can be applied to more than studyrelated things, with this the risk is also that it can be misused.

Sketch a or some future scenario (s) (20-50 years up front) regarding the technology with the help of storytelling. Start with at least one utopian scenario.
People will have a question about a mathematical equation. They want to find an answer to their question, so they look it up on the internet. On the internet, there is no information or solution for the equation. The person decides to use the technology we developed to search for an expert on a certain work-field of math and asks for help in real life.

Sketch a or some future scenario (s) (20-50 years up front) regarding the technology with the help of storytelling. Start with at least one dystopian scenario.
People will have a question about a mathematical equation. They want to find an answer to their question, so they look it up on the internet. On the internet, there is no information or solution for the equation. The person decides to use the technology we developed to search for an expert on a certain work-field of math and asks in real life for help. The person who gets asked the question cannot focus on his or her life, because he or she is constantly interrupted.

Would you like to live in one of this scenario's? Why? Why not?
No, it would be horrible to live in a world where people can constantly find you and track you. Also, being constantly disturbed for questions is not desired.

What happens if the technology (which you have thought of as ethically well-considered) is bought or taken over by another party?
The technology can still be used.

Impact Improvement: Now that you have thought hard about the future impact of the technology, what improvements would you like to make? List them below.
For now, we would not make any improvements.